WHAT IS CLAIMED IS

1. A pattern-matching processing method, comprising an area generating step for generating a left area and a right area each having a given range from a left image and a right image photographed in stereo, a pixel generating step for generating an interpolation pixel between pixels contained in the left area or the right area, and a pattern-matching step for performing pattern matching using the left area and the right area.

2. A pattern-matching processing method, as set forth in claim 1, wherein pattern matching is performed based on said left area and said right area containing the interpolation pixel, in said pattern-matching step.

3. A pattern-matching processing method, as set forth in claim 1, wherein pattern matching is performed based on said left area and said right area interpolated with the interpolation pixel, in said pattern-matching step.

4. A pattern-matching processing method, as set forth in claim 1, wherein pixel interpolation is performed on a left area and a right area containing a pixel at the center, the matching position of which has been specified by pattern matching based on the left area and the right area, in said pixel generating step.

5. A pattern-matching processing method, as set forth in claim 1, wherein pixel interpolation is performed on a right area containing a pixel at the center, the matching position of which has been specified by pattern matching based on the left area and the right area, in said pixel generating step.

6. A pattern-matching processing method, as set forth in claim 1 wherein, after pixel interpolation is performed between two transversely adjacent pixels in said left area or said right area, pixel interpolation is performed between two vertically adjacent pixels relating to the position to be interpolated, in said pixel generating step.

7. A pattern-matching processing method, as set forth in claim 1 wherein, after pixel interpolation is performed between two transversely adjacent pixels in said left area or said right area, pixel interpolation is performed between two vertically adjacent pixels based on the average value of plural pixels surrounding the position to be interpolated, in said pixel generating step.

8. A pattern-matching processing method, as set forth in claim 7, wherein the plural pixels surrounding the position to be interpolated are weighted when the average value is calculated, in said pixel generating step.

9. A pattern-matching processing method, as set forth in claim 7, wherein pixel interpolation is performed starting from the pixel position at which the number of pixels surrounding the position to be interpolated is largest, which is the target for which the average value is calculated, in said pixel generating step.

10. A pattern-matching processing method, as set forth in claim 7, wherein said average value is calculated after weighting a value less than 1 to the already interpolated pixels among the plural pixels surrounding the position to be interpolated, in said pixel generating step.

11. A pattern-matching processing method, as set forth in claim 1, wherein pixel interpolation is performed based on two pixels adjacent to each other only in the transverse direction in said left area and said right area, in said pixel generating step.

12. An image processing apparatus measuring the distance to an object that is photographed as images, by performing pattern-matching processing based on left and right images photographed by a stereo camera, and comprising a pixel generating unit for generating a left area and a right area each having a fixed range from the

left image and the right image and for generating
interpolation pixels between pixels contained in the left
area or the right area, a pattern-matching processing
unit having a pattern-matching unit performing pattern
matching on the left area and the right area, and a
distance measuring unit for calculating the distance from
the difference in positions of the left image and the
right image based on the matching position specified by
performing pattern matching on the left area and the
right area.

13. An image processing apparatus, as set forth in
claim 12, wherein said pattern-matching processing unit
performs pattern matching based on said left area and
said right area containing the interpolation pixel.

14. An image processing apparatus, as set forth in
claim 12, wherein said pattern-matching processing unit
performs pattern matching based on said left area and
said right area interpolated with the interpolation
pixel.

15. An image processing apparatus, as set forth in
claim 12, wherein said pixel generating unit performs
pixel interpolation on a left area and a right area
containing a pixel at the center, the matching position
of which has been specified by pattern matching based on
said left area and said right area.

16. An image processing apparatus, as set forth in
claim 12, wherein said pixel generating unit performs
pixel interpolation on a right area containing a pixel at
the center, the matching position of which has been
specified by pattern matching based on said left area and
said right area.

17. An image processing apparatus, as set forth in
claim 12 wherein, after the pixel interpolation between
two transversely adjacent pixels in said left area or
said right area, said pixel generating unit performs
pixel interpolation between two vertically adjacent
pixels relating to the position to be interpolated.

18. An image processing apparatus, as set forth in claim 12 wherein, after the pixel interpolation between two transversely adjacent pixels in said left area or said right area, said pixel generating unit performs pixel interpolation between two vertically adjacent pixels based on the average value of plural pixels surrounding the position to be interpolated.

19. An image processing apparatus, as set forth in claim 18, wherein said pixel generating unit weights the plural pixels surrounding the position to be interpolated when the average value is calculated.

20. An image processing apparatus, as set forth in claim 18, wherein said pixel generating unit performs pixel interpolation starting from the pixel position at which the number of pixels surrounding the position to be interpolated is largest, which is the target for which the average value is calculated.

21. An image processing apparatus, as set forth in claim 18, wherein said pixel generating unit calculates the average value after giving weight of a value less than 1 to the already interpolated pixels among the plural pixels surrounding the position to be interpolated.

22. An image processing apparatus, as set forth in claim 18, wherein said pixel generating unit performs pixel interpolation based on two pixels adjacent to each other only in the transverse direction in said left area and said right area.